presence of distal paresthesias. The existence of a deficit of power of flexion and abduction (C5-C6 territory) is established clinically and the diagnosis is finally made by CT objectifying a wedge hypertrophic clavicle bone sheathing the brachial plexus.
The patient is operated, the intervention to resect the bone block. Clavicle fracture undergone bone grafting and internal fixation. The evolution is favorable to a near-normal functional recovery.
Discussion.– Neurological deficits away from a broken clavicle are the result of nerve compression related to a secondary displacement, enlargement of bone or hold the existence of a pseudoaneurysm of the artery or the subclavian vein. The incidence of this complication is 1%. The neurological picture can be installed in a few months or years. Involvement of the posterior and medial branch of the brachial plexus is most often encountered in connection with a plexus compression between the first rib and the clavicle bone wedge to cause symptoms usually ulnar. The period of surgical management determines the speed of recovery, the prognosis is usually favorable.

Further reading

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P005-e

Osteoid osteoma: CT-guided percutaneous radiofrequency thermal ablation; a case report

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Keywords: Osteoid osteoma; Talus; Treatment; CT-guided percutaneous radiofrequency
Introduction.– Osteoid osteoma treatment was based for a long time upon surgical resection, with a lot of failure and complications.
Observation.– A 16-year-old soccer player presented at 3 months from so called ankle sprain, pain while running, direction's change and while ball striking. Talus palpation is painful. X-ray is normal, RMI shows osteoid osteoma. Aspirin has no efficacy. CT-guided percutaneous radiofrequency with biopsy is performed in outpatient care facility.
Full weight bearing is possible within 24 hours. Pain disappears in 48 hours. The patient returns to sport within 8 days (soccer and alpine skiing). Twelve months afterwards the patient shows neither recurrence nor residual pain while returning to sport at the same level.
Discussion.– Patients experience symptoms that may delay the diagnosis and the treatment which is detrimental for an athlete. Percutaneous radiofrequency thermal ablation localizes the lesion and produces local tissue destruction by converting radiofrequency into heat. A non-exhaustive review of the literature shows that this is a quick and low iatrogenic.
Conclusion.– Percutaneous radiofrequency thermal ablation provides reliable, excellent pain relief and early return to function with minimal morbidity as compared with traditional open techniques. More invasive and expensive treatments become difficult to justify.

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P006-e

Aseptic osteonecrosis of the lunatum (Kienbock disease) and handicap in a case report

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Keywords: Kienbock disease; Functional treatment; Surgical treatment
Introduction.– Idiopathic avascular necrosis of the lunatum is a rare pathology whose pathogenesis is multifactorial with a genetic involvement, anatomical, mechanical and also metabolic. It causes functional impairment and a handicap of the hands and is complicated by carpal tunnel syndrome and arthritis of wrist.
Observation.– A 53-year-old woman, right-handed, a housewife, followed for an insulin-recurring balanced for 20 years. She then reported 12 months of the right wrist joint pain, tingling in both hands and functional impairment in activities of daily living.
On physical examination, there was pain on palpation of the lunatum, a limited wrist flexion/extension, motor and sensory deficits in the territory of the median nerve with positive provocation tests (Tinnel, Phalen).
Plain radiographs of the right wrist shows necrosis of the lunatum stage IV with collapse and signs of arthrosis of the wrist. The scanner of the wrist confirms diagnostic. The electromyography found a bilateral carpal tunnel syndrome greater on the right.
Neurolysis of the median nerve and wrist immobilization orthotic for 4 weeks followed by reeducation and an analgesic therapy was allowed improvement of symptoms and functional impairment.
Discussion.– Kienbock's disease, has been known since 1843. The relative rarity of this pathology, the absence of internationally agreed upon classification and the many therapeutic methods, make it difficult to care for this disease.
It often involves a young adult who has wrist pain associated or not with a limited range of motion of the wrist and above the loss of clamping force with pain around the lunatum. Plain radiographs of the wrist may be normal at the beginning stage. In cases of diagnostic doubt, we must practice an MRI or scanner.
The choice of the functional treatment or surgery depends on several factors including the patient's age and his profession, the side attained, the stage of disease, the existence of unequal length of the two bones in the arm or wrist arthrosis.

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P007-e

A rare cause of carpal tunnel syndrome: Intramuscular haemangioma of the forearm about one case

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Keywords: Carpal tunnel sydrome; Haemangioma intramuscular of the forearm
Introduction.– The carpal tunnel syndrome includes all signs secondary to compression or irritation of the median nerve in a tunnel inextensible. The idiopathic etiology remains the most common and CTS revealed the existence of an intramuscular haemangioma of the forearm is exceptional. The purpose of this observation is to remind the possibility of extracanalar etiologies, including tumor, in the genesis of a CTS.
Observation.– This is a worker of 34 years, sent to the service for rehabilitation after surgical resection of a tumor of the forearm responsible for typical

symptoms of carpal tunnel syndrome, made of acroparesthesia intermittent lasting for one year, causing the patient to stop its operations manual. Clinical examination found a mass of the forearm, mobile, painless, hypoesthesia in the territory of the median nerve and provocation tests positive without associated muscle atrophy.
The electromyography showed a reduction in conduction velocities of motor and sensory median nerve at the carpal tunnel and forearm. Plain radiographs of the forearm has objectified the soft tissue calcifications. The scanner has objectified a tissue-like mass at the expense of the superficial flexor, surgical biopsy showed an intramuscular hemangioma of cavernous type.
During surgical excision, exploration has found a tumor depends on the superficial flexor of fingers extending to the carpal tunnel with an invasion of the perineurium of the median nerve.
The postoperative course was uneventful, the postoperative rehabilitation led to the fight against pain and cutaneous trophic disorders, the surgical scar to soften and strengthen the finger flexors. After falling two years, the patient is asymptomatic and hand function was excellent.
Discussion.– The CTS is the most widespread of syndromes canal, the diagnosis can be easily performed by most clinicians. It is often idiopathic in relation to anatomical abnormalities. The etiology is common intracanalar tumors. A tumors etiology extracanalar with intracanalar invasion to clinical expression as a dominant carpal tunnel syndrome is rarely. The median nerve damage is by invasion intraneural, perineural or by compression.

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P008-e

Radial shock wave therapy in the treatment of lateral epicondylitis

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Keywords: Radial shock wave therapy; Lateral epicondylitis
Introduction.– Lateral epicondylitis is one of the most common overuse syndromes. There are different treatment modalities and their effectiveness is rather controversial.
Aim.– Evaluate the effect of radial shock wave therapy in lateral epicondylitis.
Material and methods.– Treat with one session per week for 5 weeks patients with lateral epicondylitis. A session consisted of 2500 shocks at 2 bars. Frequency was 5 Hz and 10 Hz for the last 500 shocks. Pain was evaluated before treatment, at 3, 6 and 12 months after treatment at rest, at palpation and during Thomsen's test (VAS) and the Patient-Rated Tennis Elbow Evaluation (PRTEE) questionnaire were performed.
Results.– Sixteen patients, mean age 47.2 ± 2.3 years 15.6 ± 4.6 lasting for months were included in the study.
VAS values were:
– at rest from 3.75 ± 0.49 before therapy to 1.94 ± 0.46 at 3 months and 0.69 ± 0.38 at 1 year;
– at palpation from 7.44 ± 0.38 before therapy to 3.56 ± 0.40 at 3 months and 1.46 ± 0.56 at 1 year;
– at Thomsen test from 5.87 ± 0.46 before therapy to 2.5 ± 0.40 at 3 months and 1 ± 0.38 at 1 year.
PRTEE showed significant reduction of pain and functional improvement. The total score improved from 56.75 ± 2.34 before therapy to 27.53 ± 3.7 at 3 months and 13.69 ± 4.48 at 1 year.
Discussion/Conclusion.– Radial shock wave therapy can be recommended as second line treatment in lateral epicondylitis evolving for more than 6 months when other conservative treatments have failed.

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P009-e

Gait analysis: An objective measurement for subgrouping fibromyalgia patients

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Keywords: Fibromyalgia; Gait analysis; Subgrouping
Background.– Fibromyalgia (FM) is a heterogeneous syndrome and its classification into subgroups calls for broad-based discussion. FM subgrouping, which aims to adapt treatment according to different subgroups, relies in part, on psychological and cognitive dysfunctions. Since motor control of gait is closely related to cognitive function, we hypothesized that gait markers could be of interest in the identification of FM patients' subgroups. This controlled study aimed at characterizing gait disorders in FM, and subgrouping FM patients according to gait markers such as stride frequency (SF), stride regularity (SR), and cranio-caudal power (CCP) which measures kinesia.
Methods.– A multicentre, observational open trial enrolled patients with primary FM (44.1 ± 8.1 years), and matched controls (44.1 ± 7.3 years). Outcome measurements and gait analyses were available for 52 pairs. A 3-step statistical analysis was carried out. A preliminary single blind analysis using k-means cluster was performed as an initial validation of gait markers. Then in order to quantify FM patients according to psychometric and gait variables an open descriptive analysis comparing patients and controls were made, and correlations between gait variables and main outcomes were calculated. Finally using cluster analysis, we described subgroups for each gait variable and looked for significant differences in self-reported assessments.
Results.– SF was the most discriminating gait variable (73% of patients and controls). SF, SR, and CCP were different between patients and controls. There was a non-significant association between SF, FIQ and physical components from Short-Form 36 ($P = 0.06$). SR was correlated to FIQ ($P = 0.01$) and catastrophizing ($P = 0.05$) while CCP was correlated to pain ($P = 0.01$). The SF cluster identified three subgroups with a particular one characterized by normal SF, low pain, high activity and hyperkinesia. The SR cluster identified two distinct subgroups: the one with a reduced SR was distinguished by high FIQ, poor coping and altered affective status.
Conclusion.– Gait analysis may provide additional information in the identification of subgroups among fibromyalgia patients. Gait analysis provided relevant information about physical and cognitive status, and pain behavior. Further studies are needed to better understand gait analysis implications in FM.

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